



Louis Braille

*HISTORY OF THE HOWE PRESS
OF
PERKINS SCHOOL FOR THE BLIND*

Published in honor of
Louis Braille 1975

HV 1796
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HISTORY OF THE HOWE PRESS OF PERKINS SCHOOL FOR THE BLIND

by

EDWARD J. WATERHOUSE
Consultant to the Director of Perkins

and

Former Manager of the Howe Press 1946-1961

PUBLISHED IN BRAILLE AND PRINT TO HONOR
LOUIS BRAILLE ON THE 150TH ANNIVERSARY
OF THE INVENTION OF BRAILLE

by

THE HOWE PRESS OF PERKINS SCHOOL FOR THE BLIND
Watertown, Mass. 02172

1975

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INTRODUCTION

AT the General Assembly of the World Council for the Welfare of the Blind which met in Sao Paulo, Brazil in August 1974, it was noted that 1975 was the 150th Anniversary of the Braille System.

The Council passed a resolution "Remembering that in 1825, Louis Braille introduced this system of writing for the blind and that braille is one of the cornerstones of modern blind welfare, the blind people today are able to acquire a comprehensive education, to take part in work and to make books part of their lives due to Louis Braille's creation. . . ." The assembly resolved that a memorial year to Louis Braille and his work be celebrated in 1975.

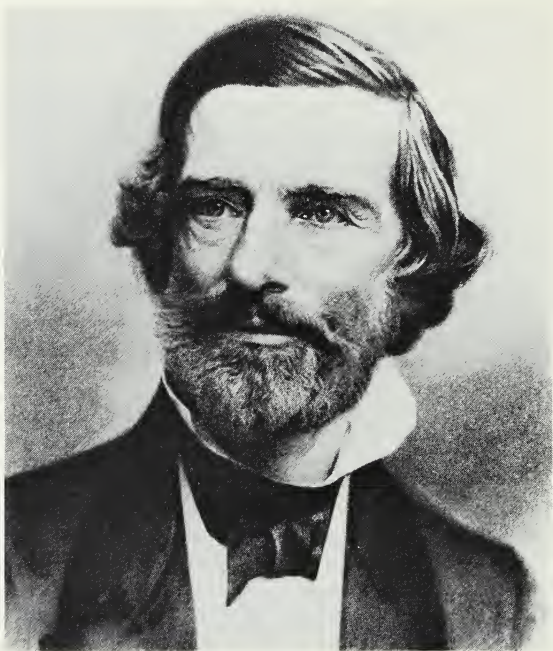
The Council passed a resolution "Remembering that in 1825, Louis the blind should emboss a volume especially in memory of Louis Braille. This short history is, I believe, appropriate for that purpose, for although the Howe Press for its first 70 years rejected the braille system and preferred to use the Boston Line Type, it is now one of the few agencies which deals exclusively in the production of braille books and of appliances for the manufacture of braille.

The material in this brief history has been obtained almost exclusively from the Annual Reports of Perkins School for the Blind.

For convenience sake, in this little volume the school is uniformly called Perkins. The school has borne a number of names since it was founded in 1829, and nothing but confusion can arise from giving it the different names it was called at different periods of its history. Perkins is the name familiar to us all.

Most of the material in the brief history has been obtained from the Annual Reports of the Perkins School for the Blind, and from the excellent unpublished and largely handwritten "History of the Howe Memorial Press and Library of Embossed Books" by S. E. Lane compiled in 1910-1911 at the request of Director Edward E. Allen. Miss Lane was a clerk in the Perkins Library.

Another useful source is the chapter by Harry J. Friedman, the present manager of the Howe Press in the *Proceedings of the International Congress on Technology and Blindness* published by the American Foundation for the Blind, New York, 1963. The chapter is entitled "The Technological Origin and Development of Mechanical Writing Devices for the Blind."



Samuel Gridley Howe established a printing department as soon as the school opened in 1831.

The Howe Press of Perkins School for the Blind
1831-1975

CHAPTER I

Samuel Gridley Howe—Pioneer Publisher for the Blind

IN 1879, three years after the death of Dr. Samuel Gridley Howe, the first Director of Perkins School for the Blind, his successor, Mr. Michael Anagnos, made a public appeal for funds for the Printing Department of the school. At this time the press was given the name of The Howe Memorial Press, and it has been called this officially ever since, although it has been customary in recent years to refer to it more frequently as The Howe Press of Perkins School for the Blind, making clear its association with the parent organization.

In naming the printing press after his predecessor, Michael Anagnos knew exactly where credit was due. For Dr. Howe, among his many other accomplishments, was a leader worldwide in the work of providing books for blind children.

Even before he admitted his first pupils to his father's home in 1832, he had made clear his attitude towards books for the blind. In Europe, which he had visited the previous year, he found that in some of the schools the idea of teaching the blind to read was not encouraged. He rejected the argument given him in England that blind people would always have seeing people available to read to them, and he recognized how much more pleasure was to be obtained by reading by oneself. "They (the blind) can stop and go back or read over a passage a dozen times, reflect upon it as long as they choose, and refer to it on any occasion," he wrote. He noted that this was particularly true of mathematics. Howe followed these remarks with a strong plea for providing Bibles to the blind. "Here is a

large number of our fellow creatures within our reach who might be supplied with a New Testament at small expense compared with that laid out in sending it among distant heathen." Howe and others in the same position found it easier to raise money to publish the scriptures than other kinds of books.

Credit for the first book ever produced for the use of the blind must go to Valentine Haüy of Paris, the founder of the first school for the blind to be established anywhere. It is told how one day in 1786, one of his students, Françoise Lesuer, while handling some papers on Haüy's desk, accidentally ran his hand over a printed sheet. He passed his fingers over it again and then called the Master to point out to him the letter "o" which his fingers detected on what Haüy saw was the reverse side of a document fresh from the press. This was the clue that Haüy needed. If Françoise could distinguish letters so lightly raised in ordinary print, what could he and any other blind person do with a large type, firmly and especially embossed. Soon Haüy was experimenting on pieces of paper with an ornate type commonly in use at that time. A copy of Haüy's first book is among the treasures of the Samuel P. Hayes Research Library at Perkins. The script type is complicated and full of curlicues. It is certainly not suitable for tangible reading.

Howe examined the books being made in Paris and elsewhere in Europe and did not find them to his liking, although he brought back four of them to use as his school opened. He found them unnecessarily bulky and, consequently, too costly. All of these books used the ordinary shaped letters of printbooks, whereas Howe felt that a special type for blind readers could be designed which would take up less space and which, while easily read by sight, would also be easier to read by touch. When the school opened, he designed what became known as "Boston Line Type," which is still used by the Howe Press on the title pages of its books. This was perfectly readable by seeing people, but each letter being narrower than usual with angles substituted for curves enabled a great deal more material to be placed on a page. For over fifty years, it was the predominant type for the blind in the United States and the only one used by the Printing Department at Perkins in the 19th Century. In 1851, Howe was awarded a gold medal for its development at Prince Albert's famous International Exhibition in London.

Within a few weeks of the school opening, in an address to the public, the Trustees of Perkins wrote, "these children taken at random have now been under instruction nearly five months and can read correctly with their fingers books printed for their use." Obviously, these were the books Howe had acquired from Europe, but by 1835, he wrote, "The Institution is now provided with a printing press, and the whole of 'The Acts of the Apostles' has been printed." This seems to have been the first book produced by the printing department.

It should be noted that up until this time no books had actually been produced in braille, even in Paris. M. Louis Braille had developed this system in 1825 and Dr. Howe had visited the Paris Institution where this took place in 1831, but it is not known whether he ever met Louis Braille or whether, if he did, he learned anything about the system which eventually was to obtain worldwide acclaim by blind people and was to replace all other forms of types for the blind. Howe felt strongly, as many others did then, that a system that differed from what was used by the seeing would tend to separate the blind still further from their fellows and should not be used. He seems not to have appreciated the weakness of a system which could be read by blind people but not written by them.

Louis Braille's first book was also published in 1837. It was a history of France, and a copy of this is also among the treasures of the Hayes Research Library.

The Printing Department at Perkins was kept quite separate, as far as its finances were concerned, from the rest of the Institution. Dr. Howe personally made himself responsible for raising funds for this purpose independently of other needs of the school. He recognized that books made by any of the very few presses for the blind in the world should be made available to all persons and not confined to local readers. He hoped to sell his books wherever the blind were educated to read, and he also hoped to enter into exchange arrangements with other presses, but this idea did not meet with as much success as he hoped. The fact that his books were demonstrably more efficient and cheaper than those produced elsewhere seems to have caused a certain amount of jealousy in Europe, and it may be claimed that Dr. Howe was impetuously undiplomatic in the comparisons which he all too frequently made between the books produced in Boston and those issued elsewhere. Nevertheless, whenever he could, he cooperated with other presses and arranged for Mr. Samuel P. Ruggles, his assistant at the Press who had ingeniously designed the machinery used in Boston, to produce similar equipment for the printing press at Philadelphia.

As the years passed, a number of books were added to the school library, many of them being the work of Dr. Howe, himself. By 1840, after five years of work, the catalog of the Boston Press included 41 titles, the most impressive of which were "The New Testament," selling for \$12 and, "The Outlines of History—Ancient and Modern," at \$10. None of the other volumes exceeded \$3 in price and were much smaller. An order for an addition of the Psalms was received from England, and books of moral inspiration were embossed including "The Pilgrim's Progress," "Life of Melancthon," and "The Book of Sacred Hymns." To encourage temperance among the students, we find "Baxter's Call," and "Six Penny Glass of Wine." The only books which might be considered recreational at all were "The Dairyman's Daughter," and "The Harvey Boys." There were also spelling books, English grammars and no fewer than four books of atlases

and geographies, all of which apparently Dr. Howe wrote and designed himself, including the raised maps on which he spent much effort. He believed them comparable with geography books currently used in the regular schools of the period.

Dr. Howe's love of geography inspired Mr. Ruggles to produce the magnificent wooden globe in 1837 which has stood in a prominent position in the entrance hall of the school ever since. Although this globe proved actually too big to be easily understood by pupils, it is an outstanding piece of work which bears tribute to its maker's skill.

While this may seem to be a very small result for five years' work, it should be pointed out that, during the same period, only nine books were produced in Philadelphia and practically nothing elsewhere.

The chief obstacle in the development of the press was lack of finances, and there were years in which Dr. Howe had to report that the press had been idle either for half or all of the time. In 1876, at the end of his long career, the catalog had only doubled in size. It included both "The Old Curiosity Shop," for which Charles Dickens paid, and some of Shakespeare's plays.

This admittedly small library comprised more than all the books printed for the blind in the English language elsewhere. The time when blind children would be able to profit substantially from material they could read had not yet come, a fact Howe greatly deplored.

Dr. Howe realized that the best solution to the problem of books for the blind would be for Congress to establish and finance a National Library for the Blind. He would, of course, have liked this to be at Perkins. As early as 1836, he tried to secure federal funds for the blind, taking some of his pupils to Washington to demonstrate their skills before Congress. Then, in 1837, he went back to Washington for the same purpose. In 1846, he suggested that the seven institutions for the blind then in existence, "send a deputation of their pupils to Washington for the purpose of giving an exhibition before the Members of Congress and enlisting their feelings, and that a petition should then be presented asking for a grant of money or land that would yield at least one hundred thousand dollars."

However, Howe was ahead of his time. Yet, his efforts were not entirely wasted; for in 1879, the year that Michael Anagnos named the Perkins Printing Department after him, Congress appropriated \$10,000 a year to the American Printing House for the Blind in Louisville, Kentucky. This legislation proved since to be of incalculable value to blind students in the United States who now have access to large quantities of recorded and embossed material from what has become the largest printing house for the blind in the world, with annual appropriations in excess of \$1,600,000 for textbooks and educational appliances.

The blind children of the United States are probably better served than those of any other country in this way. This recognition by Congress after a

period of years, that blind children should be provided with books, certainly must be due at least in part to the efforts of Dr. Howe in his lifetime. The results, undoubtedly, would have given him great satisfaction.

However, the fact that line type has been replaced by braille probably would not have met with his approval at all. He remained the chief proponent of line type throughout his life. In 1871, in a letter to the American Instructors of the Blind, he described his requirements for embossed letters, "Two qualities are essential for this type. First, it should resemble in form and appearance the letters in common reading books. Second, it should be such as can be distinguished by blind persons gifted with ordinary, tactual sense. I need not urge the reasons for the first; they will be obvious to reflecting persons. Besides, it is manifestly useless to introduce new characters, which have a great disadvantage of differing in form and appearance from ordinary letters, unless they have some decided, compensating advantages in legibility or in economy or space. But it is absurd to introduce new ones, when they are not only less legible than those in use, but occupy far greater space. Yet, unreflecting persons urge systems like those of Moon, Fry and others which occupy more space than the ones so long and so generally used in this country and in which more printed matter exists than in any, perhaps in all others. The legibility of this type, by all ordinary blind persons, is established by thousands of persons." Note that he writes not a word about giving blind people a system they could write as well as read.

Howe must have had some knowledge of braille for even though he doesn't mention it in his letter above, the catalog of the Printing Department for 1869 listed, "Braille's Writing Boards," at \$1.25.

CHAPTER II

The Administration of Michael Anagnos

WHEN Michael Anagnos succeeded his father-in-law as Director of Perkins in 1876, he continued to support the printing of books for the blind. He promptly set about improving the finances of the Press, and here his great ability in raising money proved effective enough to give the Press a substantial endowment. An embossed edition of a memoir of Dr. Howe was produced soon after his death, and in 1877 a surplus of \$300 resulting from the sales was put aside as a "Howe Memorial Fund" for embossing books.

This was the beginning of a well organized appeal to the public for \$100,000. A public meeting was held in Tremont Temple where speeches were made, some of them very lengthy, by a number of distinguished gentlemen, including Governor Long, Dr. Samuel Eliot, Reverend Philip Brooks, the Pastor of Tremont Temple, and Mr. Anagnos himself. Laura Bridgman finger-read a passage from the Bible, and in accordance with an already well-established tradition there was choral singing by the Perkins pupils.

When the school celebrated its first half century of service in 1881, the Trustees were able to announce that a sum in excess of \$100,000 had been raised.

From that time on the Press was called "The Howe Memorial Press." No separate charter was sought then or later. The Press continued as an integral part of the school, but as before, with independent funds. Responsibility for the activities of the Press continued to lie in the hands of the

Trustees of Perkins and the members of the Perkins Corporation. In 1882, the Board passed a resolution which included this statement, "The object of the friends of the blind in raising an endowment of \$100,000 for the 'Howe Memorial Press' is not only to provide the peoples of our institution with an adequate supply of embossed books and tangible apparatus, but also to render our publications accessible to all sighted readers in New England and to aid, so far as it is in our power, all other schools similar to our own in their efforts to increase and to improve their educational facilities." It was resolved that a number of books should be placed in various public libraries around the State for free distribution. Apparently braille had already found its way into the school, although, as yet, no braille books had been produced by the Press.

It should be noted that in October 1876, Mr. Anagnos states, "Point-Writing, after the system of braille, has received considerable attention, although not to neglect square hand. The advanced classes have constantly employed the point to keep memoranda and notes of some of their studies." This suggests that as yet, braille was not coming into use as a reading medium.

In 1868, Mr. W. B. Wait, the Superintendent of the New York Institution for the Education for the Blind, invented a system of writing for the blind which became known as the New York Point. Unlike the Braille System which includes six dots for each cell, three dots high and two dots wide, in the New York Point the cell is only two dots high, but can be of varying widths. Dr. Wait became a strong protagonist for this system and argued its superiority over others. After 1870, New York Point grew notably in use with only a handful of schools refusing to accept it, including Perkins. The American Association of Instructors of the Blind in 1871 endorsed New York Point officially and in 1882, the Association voted that the American Printing House for the Blind should use one-half its output in New York Point, replacing by that much the still used Line Type.

However, Mr. Anagnos must have recognized the inevitability of a point system supplanting Line Type for certain purposes. He invited Mr. Joel W. Smith, the ingenious head of the Perkins Tuning Department to devise an improved system of braille. This new system, which Mr. Smith completed in 1878, was known first as "Modified Braille," but in 1892 when it was being used fairly widely, it was renamed American Braille. The system differed from the original braille in its use of symbols with the fewest dots for those letters most frequently found in the English language.

Writing braille with a slate is, of course, a very tedious business. However, as early as 1865, Mr. Joel W. Smith had devised for himself a machine known as the "Daisy Writer," since the six keys of the Braille System looked like petals of a daisy. This was considered too expensive for general use, although in Mr. Anagnos' first Annual Report, it was listed among the products of the printing department at a cost of \$3.75, which seems to

be a very reasonable sum even considering the then high value of the dollar. It was not listed in subsequent catalogs.

It is difficult to determine just when the Howe Press first embossed a book in braille. In 1879, Mr. Anagnos, in reporting improvements in the equipment in the printing department, states that "types of both Boston and Braille Characters had been made new." But none of the catalogs of the Howe Press up to that point included mention of braille. Perhaps the Braille Type referred to was used exclusively for music.

In 1892, Mr. Frank H. Hall, the Superintendent of the Illinois School for the Blind, invented a foot operated stereotyper which made possible a reproduction of braille books more efficiently and at less expense. This is still the type of machine used worldwide in producing braille, though electricity has long ago replaced foot power. The following year, the Howe Press purchased a stereotyper from Mr. Hall, and in 1894, Mr. Anagnos referred to the teaching of Greek Braille in the school. Perhaps it was the difficulties involved in embossing books in Greek characters that finally overcame the school's reluctance to braille. Some support for this theory is found in the fact that in Michael Anagnos' last report in 1906, the only braille books listed are those which involve the use of Greek. These are: *Vocabulary to Xenophon's Anabasis*, *Homer's Iliad*, *Seymour's Vocabulary*, *Keep's Iliad*, *White's Beginners Greek Book*, and *Xenophon's Anabasis* itself.

Some months before he died, Mr. Anagnos had the satisfaction of learning that legislation which he had urged on Congress had been passed. This permitted embossed books for the blind to be mailed free of charge, a great boon to blind readers and the librarians and printing press operators that serve them.

The Manager of the Howe Press during Mr. Anagnos' Directorship was the redoubtable Mr. Dennis A. Reardon, who took charge of printing for Dr. Howe as early as 1853. This Perkins graduate had great inventive ability and although totally blind, had considerable architectural skills. He served three directors with great success until his death in 1915. In addition to managing the Press, he helped to plan new buildings and supervise their construction.

CHAPTER III

Growth of the Circulating Library

As soon as embossed books became available, Dr. Howe made sure they were placed where pupils could read them. Wherever they were could be considered the beginnings of the Perkins Library. He also sought ways of making the books published by the Press available to blind readers elsewhere. As we have seen, however, the output of the Press during the forty years of his direction was quite limited.

Under Mr. Anagnos, with adequate funds available, new titles were published each year and emphasis was placed on general literature and fiction which appealed to youth. For example, new titles listed in 1885 included "Heidi," "Quentin Durward," "What Katy Did," Kingsley's "Greek Heroes," and Hawthorne's "Scarlet Letter." "Romeo and Juliet" and "King Henry the Fifth" were in preparation. Mr. Anagnos reported, "If, as Bacon says in one of his essays 'reading maketh a full man,' the majority of our scholars manifest an upward tendency toward fullness and ripeness. They do not keep the tips of their fingers rusty or idle."

The supply of books available now made it possible to offer library services to blind persons outside the Institution. Copies of embossed books were placed in public libraries in several of the bigger cities in Massachusetts, and by 1890 it was reported that nearly four hundred volumes had been circulated from the school during the year.

Providing space for these bulky embossed books became an increasingly serious problem. In 1880, a new brick building was erected for school and library purposes on the grounds of the Girls Department which

it was believed would provide ample storage space for many years. But in ten years it was so crowded that books were heaped upon each other on the floor. Conditions in the Boys Library were equally crowded.

In 1892, both collections were brought together in a new and large building erected for the purpose with boys using it in the morning and girls in the afternoons. Another half century would elapse before the two sexes were free to visit the library at the same hours.

Up to this time most of the books in the library were produced at the Howe Press but as other presses in New York and Louisville produced an increasing number of titles in various "points," copies of these were added to the shelves and made available to anyone who needed them. However, the Perkins Library, which in the 1920's became one of the distributing libraries for the Library of Congress, owes its existence to the Howe Press which supplied it with all its early contents.

The Howe Press also played a role in the last years of the nineteenth century in the inauguration of home teaching to blind adults. Members of the Perkins Alumnus Association volunteered their services to instruct blind women in Massachusetts to read by touch, and the Howe Press provided them without cost with appliances and books. This work, which was soon supported by funds from the State Board of Education, marked the beginning in the United States of rehabilitation services to the visually handicapped. In this way, the Howe Press played a small but pioneering role in a mighty endeavor.

CHAPTER IV

The Allen Years

IN 1906, Dr. Edward Allen, who had taught at Perkins from 1888 to 1890 and then had become Superintendent of the School for the Blind in Philadelphia, was appointed to succeed Michael Anagnos as the third Director of Perkins.

Each of the first three directors was involved in a different controversy over the type of books which should be used by blind readers. Howe supported his own Boston Line Type over any other style of embossed letters and rejected the thought of using points. The Anagnos years covered the period in which Line Type was yielding to Point Systems. During the years 1906-1931, when Dr. Edward E. Allen was the Director of Perkins, the international controversy which has become known as "The Battle of the Types" was finally resolved. It took about a century from the time that braille was invented in Paris and the time that Dr. Howe's Boston Line Type was introduced in America for Europe and North America to agree on a code which was sufficiently uniform for blind people on both sides of the Atlantic to use and to enjoy both in reading and writing.

Line Type was not a contender in this final dispute. Its fatal flaw was, of course, that blind people could not use it for writing. The Howe Press adopted braille at Dr. Allen's request in 1908 and American braille textbooks gradually replaced those in embossed letters throughout the school.

It is not necessary to recount the arguments put forth by the proponents of the French braille of its inventor, the modified version used in Great Britain, American braille in use at Perkins and the Howe Press, and Mr.

Wait's New York Point. A code known as Standard English Braille, Grade II, was the victor, with American presses holding out also for a compromise code with fewer contractions for textbooks called Braille Grade 1½. Grade 1½ later disappeared from the scene altogether as educators discovered that pupils usually had no trouble learning Grade II from their first lessons. This was a great triumph for Louis Braille, whose basic alphabet remained unchanged. The Howe Press accepted the final verdict.

From the time of Dennis Reardon's death in 1915, the Howe Press was under the capable management of Mr. Frank C. Bryan, who had been employed by Dr. Allen as a stereotyper in Philadelphia and who accompanied Dr. Allen when he moved to Boston. Mr. Bryan directed the changeover from the foot operated stereotyper which he had used for many years to the power driven machine. He also shared in designing the fixtures that made two-sided interpoint embossing possible, an improvement of great economic significance.

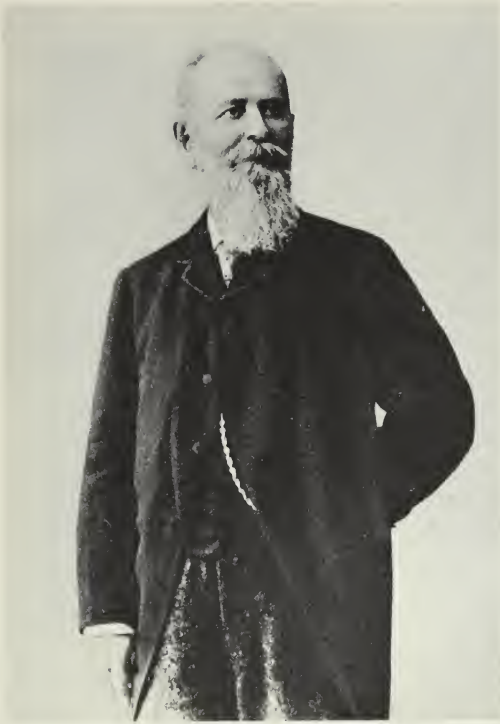
There have been several claimants to the honor of producing the first interpoint braille book. Some interpoint pages produced by Dr. Allen and Mr. Bryan before 1900 in Philadelphia are to be found in the Hayes Research Library and these would seem to be the earliest, but it was not until the 1920's that the method was used regularly by the Howe Press and by the Braille Institute of America in Los Angeles, California.

With the increased use of braille, the need for braille writers increased. The Daisy Writer, already mentioned, was not sturdy enough for regular school use. The first braille writer to win general acceptance was invented in 1892 by Mr. Frank H. Hall, the Superintendent of the Illinois School for the Blind, who also produced the first stereotyper. Writers of essentially the same design are still in use in the United States and many other countries.

The first Perkins braille writer was made by the Howe Press about 1900 and was very similar to Hall's machine. For the next thirty years, a series of machines of a similar type were produced. The different models varied chiefly in the way the paper was fed into the machine.

The chief event during Dr. Allen's term as Director was the move by the school from South Boston to Watertown. For seventy-five years, South Boston had housed the school and its Printing Department and the Workshop. This latter had been established by Dr. Howe in 1837. He hoped to demonstrate to the businessmen of Boston that blind men and women were capable in employment. In this he was disappointed. It was far easier to obtain their financial support than to find employment for his pupils. What he had hoped would be a temporary demonstration project became permanent.

When the school moved to Watertown, most of the embossing of plates was continued in South Boston but the printing presses went to Watertown. The Workshop, which since 1908 had been under Mr. Bryan's management, remained in South Boston.



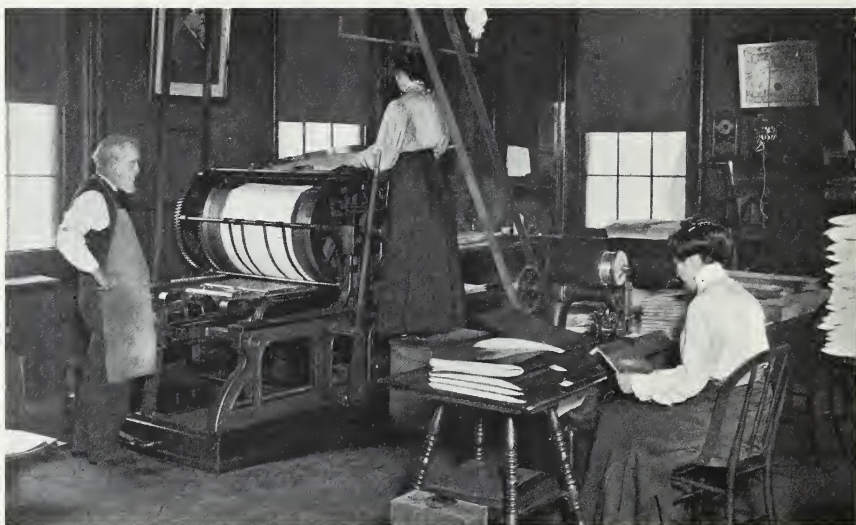
Michael Anagnos raised an endowment for the printing department and named it The Howe Memorial Press.



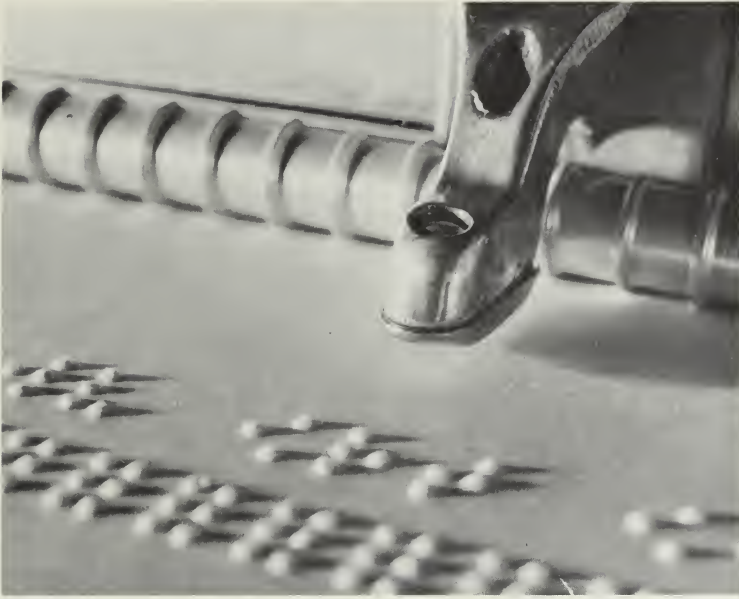
The Daisy Writer is the earliest known braille writer. It was made by Joel E. Smith, a blind member of the Perkins faculty.



The library built to house the products of the Howe Press when the school was in South Boston.



The press room in South Boston. Dennis Reardon who, though blind, supervised printing under Directors Howe, Anagnos and Allen.



The revolutionary concept of a moving punch and die assembly makes the Perkins Braille unique.



David Abraham (left) inventor is presented with the 25,000th Perkins Braille by Harry J. Friedman, Howe Press manager, while Edward J. Waterhouse looks on approvingly.



*Over 90,000 Perkins Brailers have been manufactured
in the Howe Press machine shop.*





Albert Czub, a Perkins graduate, has tested practically all the Brailers manufactured prior to their careful packing and shipment.





Children at a school for the blind in Taichung, Taiwan unpack a shipment of Brailers presented by the Hildesheimer Blindenmission of West Germany.

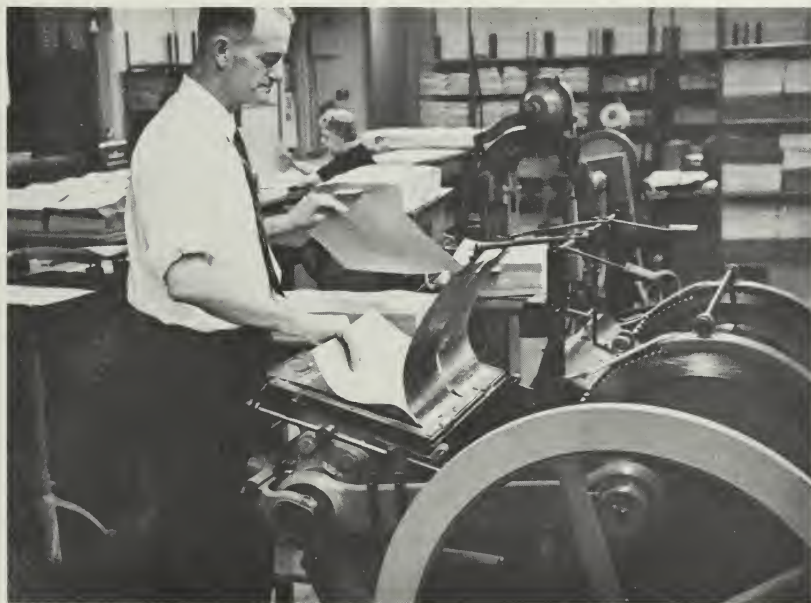


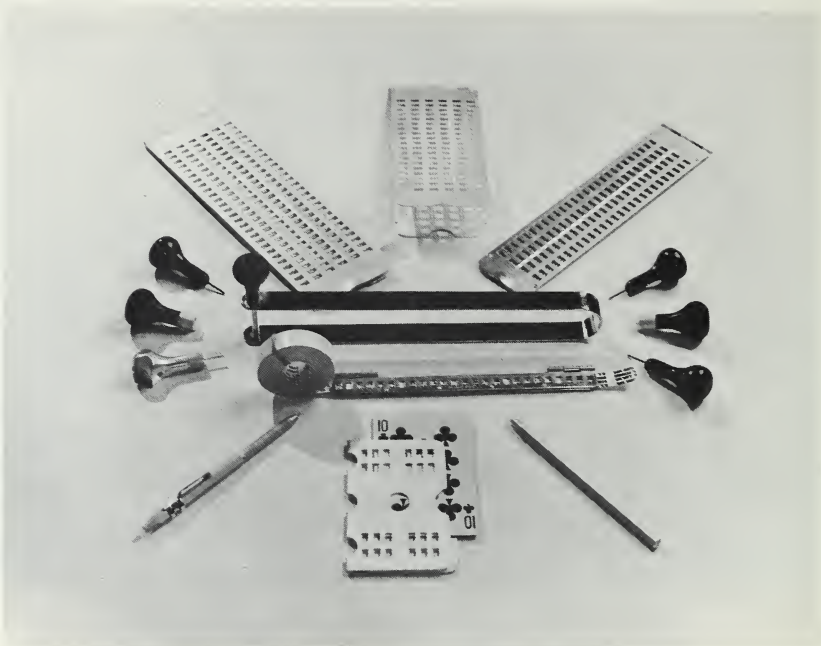
Children in a school for the blind in Liverpool, England using Brailers.



Bertha Kaesetta, stereotyper, and Bill Wyckoff, printer, have embossed braille books at the Howe Press for over a quarter of a century.

Most of the products of the Howe Press are used for the writing of Braille.





Some of the Braille writing devices manufactured by The Howe Press.



The Perkins Brailler which has become world famous since its introduction in 1951.

The Workshop quarters had become dilapidated and a fire hazard. In 1930, a new building was opened in South Boston and Mr. Bryan's two charges, the Workshop and Howe Press, moved in. These were far more spacious quarters than either had enjoyed before.

The Howe Press had seen many changes in its first century of existence. It could look back on its early days when it was without doubt the most active printing press for the blind in existence. As its first century ended, Dr. Howe's dream of federally financed books for the blind reached a new stage of fulfillment. The Library of Congress accepted responsibility of providing braille books for the adult blind and received a generous annual appropriation from Congress. The Howe Press shared with the American Printing House, the Clovernook Press in Cincinnati and the Braille Institute of America the task of producing the books for the Library. The Perkins Library was assigned the responsibility of distributing them in the New England States.

Although no longer the largest of its kind, for the American Printing House had long since outstripped all other presses in America and elsewhere, the Howe Press had shown steady growth since its endowment in 1882. The Perkins Annual Report for 1931 listed investments of \$300,000. Sales of books and music totaled \$1,800 and of appliances \$8,000 with desk slates the major item.

It looked forward to a second century of service with ample resources and capable management.

An important incident which occurred in the late 1920's was the founding of the National Braille Press by Mr. Francis Ierardi, a Perkins graduate employed by the Massachusetts Commission for the Blind. In its early years, the Press occupied space in the Howe Press building and made use of its equipment. Eventually the Press acquired its own facilities, but the Howe Press takes satisfaction in its participation in the establishment of this important agency.

CHAPTER V

The Second Century

THE retirement of Dr. Edward E. Allen in 1931, after 25 years as Director, was followed by the appointment of Dr. Gabriel Farrell, a newcomer to work for the Blind. The main purposes of the school and the Howe Press were well established and the change in leadership did not lead to any fundamental changes in plans.

The Howe Press became increasingly busy producing braille books for the Library of Congress and braille music for the school. Its small machine shop manufactured a variety of appliances, the majority of them being braille slates.

There was a steady growth in the quantity of braille embossed during the twenty years Dr. Farrell directed. In his first year, the Press reported an output of 425,000 pages of braille, while in 1951, when he retired, the quantity was over one million. Much of this was for the Library of Congress, but it also included a considerable amount of braille music.

This was the period which saw the introduction of talking books for the blind by the Library of Congress. Both the American Printing House for the Blind in Louisville, and the American Foundation for the Blind in New York City set up the necessary equipment for producing the long-playing records but it was decided that the Howe Press would not engage in this activity.

An interesting activity directed by the Howe Press during the years 1935-38 involved two projects under the Works Progress Administration

(WPA) set up by President Franklin D. Roosevelt to provide work for some of the nation's unemployed during the depression.

The first of these projects called for the production of embossed maps. About 40 men and women, 15 of whom were blind, designed and embossed atlases containing 350 geographical and historical maps. The latter were believed to be the first ever made for blind students. Copies of the atlases were distributed to schools for the blind throughout the country. Unfortunately, the events of the 1940's made many of the maps, particularly those of Europe, obsolete.

The second project, employing about the same number of workers, produced a wide variety of educational models. These included several types of bridges, a number of buildings such as the Parthenon, various ships including the "Mayflower" and models for use in mathematics classes. As far as possible, these also were made available to students in other schools.

CHAPTER VI

Birth of the Perkins Brailler

BY far, the most important action concerning the Howe Press taken by Dr. Farrell was the invitation he extended to David Abraham to design a new braille writer. As this led to the greatest contribution the Howe Press had made in its long history to the education and well-being of blind persons throughout the world, it is worth relating in some detail.

Dr. Farrell was not satisfied with the braille writers being turned out in small quantities by the Press. These machines were very similar to a number of others being made both in the United States and overseas. Moreover, they were not precision-made machines and frequently needed repair. Their main frame was cast iron and when dropped, they were liable to break. They were noisy and relatively expensive. They had nothing particular to offer in way of competition with other machines. However, Dr. Farrell hoped the Howe Press could develop a machine which could offer enough advantages to warrant production. This opportunity came in the mid-1930's with the arrival at the school of Mr. David Abraham.

David Abraham was an Englishman born in Liverpool. He was one of the original members of the Royal Flying Corps when it was created a few years before World War I broke out. In the Flying Corps, he acquired a knowledge of auto mechanics and developed the habits of accuracy and high standards which would pay off quite handsomely in later years at the Howe Press. During the war, he participated in early raids over the German trenches when hand grenades were used for bombs and pilots attacked each other with pistols.

After the war, he returned to his father's business in Liverpool which was engaged in the manufacture of stair rails. During this period, he designed and built some excellent machines for turning the various parts used in this business. However, for various reasons Mr. Abraham decided to come to the United States. Just about the time he arrived, the depression broke out and he was forced to accept whatever employment he could. For a while he worked with a maintenance crew on the Charles River Road which separates Perkins from the River. Seeing the school sign he came in and asked if there was a position which he could have as a teacher in our Woodworking Department.

Dr. Farrell hired him in this capacity and soon discovered his remarkable skill as a carpenter. It was also learned that he had had some success in machine design and, consequently, he was invited to try his hand at working on a new braille writer. My own position at that time at the school was a teacher of mathematics, but I was also beginning to understudy Mr. Frank C. Bryan, the Manager of the Howe Memorial Press, who was approaching retirement age.

Dr. Farrell instructed me to draw up with Mr. Abraham the desirable specifications for a machine. Mr. Abraham thereupon started to work in complete secrecy, and for several years the only evidence of his activity was an occasional conversation with me about some features which might or might not be worth incorporating into the design. Just before World War II broke out, he produced a prototype of a new writer, now known as the Perkins Brailier, which was identical with the model which was later to become popular worldwide.

The war put a halt to further activity but in 1946, Mr. Abraham was invited to join the Howe Press staff to put the machine into production.

The specifications which had been drawn up called for a machine which would have a touch so light that the fingers of both six-year-olds and the aged could handle the keys easily. It must also be easy to use. It should require little time to insert paper, and also be quick in line spacing. It should also, if possible, permit the paper which had been embossed to be reinserted without destroying the raised material so that more braille could be added even including a dot in an unfinished cell. This was a feature that was particularly desirable in arithmetic classes. The machine should also be quiet.

Finally, the machines should be tough and hard to break. Experience had shown that much damage had been done to braille writers as pupils carry them through the school corridors, bumping into walls or furniture. This meant that there should be a minimum of projecting parts. This machine has no overhanging parts. It does not have a carriage as the conventional typewriter does which projects first to the right and then to left. Instead, it has a complete embossing head which moves from left to right across the page.

Mr. Abraham's machine incorporated these features and a number of others. For example, a very useful item is that when the writer comes to the bottom of the page, the paper does not fall out, to the frustration of its blind user. The paper has to be released by moving a lever.

The years 1946-1951 were required to get the writer into production. First of all, the machine shop, and indeed all of the activities of the Howe Press, were brought back from South Boston to the Watertown campus, and the building which had housed both the workshop and the Press was sold, the workshop having been closed down in 1952. Mr. Frank Bryan retired at this time and the writer of this brief history replaced him as Manager.

These were difficult years since materials were hard to obtain following the war and Mr. Abraham insisted that every piece of material and every part purchased be exactly true to specifications. Nor was he satisfied that he had found the best way of manufacturing and assembling the parts until he had tried out a variety of alternatives. During this period, I was instructed by Dr. Farrell to travel to conventions and other places where blind people gathered to display the Perkins prototype machine and to find out what interest existed, if any, in its purchase. Although the Trustees of the school had originally authorized the manufacture of no more than 1,000 models, orders for twice this many had been received before the first machine came off the production line.

In 1951, the first machines were available for purchase and there has never been a time when there has not been a considerable backlog of orders, even the facilities of the Howe Press have been enlarged on several occasions.

The success of the Perkins braille is largely due to the fact that it is a precision instrument. Mr. Abraham claimed that there were more precision parts in it than in many wristwatches, which may well be true.

The light touch which Mr. Abraham incorporated into his machine has brought about an important change in the way braille is introduced to blind children. Previously, small children were introduced to braille with the braille slate, which meant learning the alphabet in reverse for writing and straight forward for reading. Many schools throughout the world now start their children on the Perkins Braille, which simplifies the process greatly.

So great has been the demand for the Perkins braille that it has been difficult for the Howe Press to pay very much attention to anything else. Models have been developed which can be used with one hand, and recently machines which produce a larger sized cell, known as Jumbo Braille, have proved popular.

Until 1961, Mr. Abraham was in charge of producing the braille and in that time over 16,000 machines were manufactured. He retired at that time and was replaced by Mr. Harry Friedman. Up to that point the writer of this booklet, although he had become Director of the school in

1951, had retained the management of the Howe Press. Mr. Friedman was appointed Manager, and under his direction the production rate of the brailler has increased greatly while the quality of workmanship has been maintained at the high level which Mr. Abraham established.

The development of the Perkins Brailler was very costly. Although some relatively small grants were obtained from various foundations, most of the cost of manufacturing the original tools were borne by the Press. Over 40% of the Perkins endowment, which had reached \$300,000 at the time when work on the project began, was expended before a single machine was sold. During the years since, this expenditure has been recovered and the Press is in a position to meet any challenge that it is likely to face in the future, including the replacement of very expensive dies which having been used to produce nearly 100,000 models are now wearing out.

Braille printing, of course, has not been neglected and the Press continues to produce books for the Library of Congress, together with music and other materials for the school.

Since January 1971, the Howe Press has produced popular children's story books in a unique combination of inkprint and braille. Traditionally, children's story books for the blind have been produced in braille on white sheets of paper. Our "Braille Vision" books are the original print book with all of its colorful illustrations, plus the braille equivalent of the inkprint, embossed on the same page. The inkprint is not damaged by the raised braille dots, and the author's and illustrator's original intent have been preserved, with the braille reader enjoying the same story as the sighted listener, whether it be a blind child with a sighted parent, or a blind parent or grandparent with a sighted youngster.

Howe Press has received three National awards from the American Institute of Graphic Arts for the unique format and style of children's books.

The newest pursuit of Howe Press is demonstrated in "Cat In The Hat" by Dr. Seuss in which "word pictures" were used. The colorful and whimsical illustrations of the Cat and Thing One and Thing Two are now contained in a revised braille text that tells the reader what is happening in the pictures. In the story of "Milton" the panda bear, the braille is in the new Jumbo size. This larger braille permits a person who cannot discern regular braille due to diabetes, etc., the opportunity to read the larger braille dot and cell.

The Howe Press has completed 52 children's books for the Library of Congress Regional Libraries of the Blind and Physically Handicapped. In addition, 30 titles are in preparation to be Braille Vision books.

To date, Howe Press has purchased 17,860 inkprint children's books from 31 publishers to be converted to Braille Vision books.

The original goal of Dr. Howe that the blind should be able to read is being furthered by the activities of the Howe Press today. Moreover, the

Howe Press also enables the blind to write as well as read, a goal which Dr. Howe clearly would have come to approve in time.

A large number of the brailers manufactured are being used by seeing persons, many of them volunteers, to emboss materials for blind students. It is said that more than half of the hand-embossed braille produced in the world in recent years has been done on the Perkins Brailier. The genius of Mr. Abraham would undoubtedly have rejoiced the heart of Louis Braille.

The Howe Press is essentially an organization dealing with braille. This is, perhaps, the only agency in the world which deals exclusively in producing braille or the equipment for making braille. The decision to refrain from entering the recording field continues in effect and there is no thought that it will be changed. In the near future, it is expected that there will be a successful electrically operated brailier available. In the meantime, the orders for the manually operated model continue to flow in, especially from overseas where over half of the models sold have gone in recent years.

With the introduction of the Perkins Brailier, the number of employees in the Howe Press has numbered approximately 50 for the last twenty years, a far cry from the two or three employed by Dr. Howe, more or less on a part-time basis, or even from the half dozen or so during Dr. Farrell's years. The machine shop which has been constructed on the Perkins campus is equipped with the most modern machinery and the whole operation is efficiently carried out by a loyal group of competent employees.



A Perkins pupil using a Brailier. Many of them own their own machines.

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